

# 花式喷水池控制系统设计

## 摘 要

我国各方面发展越来越好，为了使市民能生活在更美观的环境，在城市的各个场合都能看到各式各样的喷水池。喷水池作为一种景观建筑，提升了城市的文化蕴养。但是早期的喷水池都是只有固定的花式，过于单一。而使用 PLC 作为控制系统可以设计多种喷水花式，并进行花式切换。若要设计新花式，直接更改梯形图就可改变花式，使喷水池更具有灵活性。

本论文是基于西门子 S7-200PLC 编程，任务就是设计出不同的喷水花式。通过观察我的城市好几处喷泉的花式，总共设计了四种不同的喷水花式，并且可以以单步连续两种运行方式运行。本控制系统具有工作指示灯，花式选择，单步连续切换等。

本设计最终实现了四种不同的喷水花式，分别完成了 PLC 接线图和软件设计。使用了 S7-200 仿真软件对程序进行了仿真，验证了程序的可行性。最后还使用了组态王 6.55 版本进行了动画展示，使喷水池喷水效果更加直观。

**关键词：**PLC；控制系统；花式喷水池；组态王

## Abstract

In order to make people live in a more beautiful environment, we can see all kinds of water spray pools in various occasions of the city. As a kind of landscape architecture, spray pool improves the cultural connotation of the city. But in the early days, the water spray pools were only fixed and too single. Using PLC as the control system can design a variety of spray patterns, and switch patterns. If you want to design a new pattern, you can change the pattern directly by changing the ladder diagram, which makes the spray pool more flexible.

This paper is based on Siemens S7-200 PLC programming, the task is to design different spray patterns. By observing the flower patterns of several fountains in my city, four different kinds of water spray patterns have been designed in total, and they can

operate in two successive operation modes. The control system has working indicator, fancy selection, single step continuous switching, etc.

Finally, four kinds of spray patterns are realized in this design, including PLC wiring diagram and software design. S7-200 simulation software is used to simulate the program and verify the feasibility of the program. Finally, Kingview is used six point five five The version is animated to make the spray pool spray more intuitive.

Key Words:PLC control, control system, fancy fountain, Kingview

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